SUPPLEMENT
TO THE
British Medical Journal

LONDON: JULY 4TH, 1891.

A WEEKLY EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(1) Primary Splenomegaly.

M. BRUHL (*Archiv. Gén. de Méd.*, June, 1891) describes the disease first called splenomegaly by Professor Debove, and characterised by (1) hypertrophy of the spleen; (2) progressive anæmia without leukæmia; and (3) absence of glandular enlargement. It may begin with general symptoms of anæmia, with pallor, fatigue on the least exertion, and debility not unlike Addison's disease. More rarely it commences with pain in the left hypochondrium, nausea, vomiting, and even obstinate diarrhœa. These attacks of pain, except for the locality, resemble hepatic colic. They are due to a perisplenitis. The spleen is enlarged, somewhat tender, and the surface slightly irregular. Frequently there is a pleurisy of the left base. But even in the second group of cases, a history of previous weakness, loss of colour or epistaxis can generally be made out. When the disease is fully developed the anæmia is not essentially different from other forms of anæmia. Examination of the blood reveals nothing that is pathognomonic. The red cells are much diminished in numbers, and the amount of hæmoglobin may be reduced to one-half. In most cases the number of white cells is not increased. No micro-organisms have been found. The enlargement of the spleen is progressive, uniform, and considerable. Sometimes the liver is enlarged. There may even be an interstitial hepatitis. Digestive troubles and constipation are usually present. Hæmorrhages do not often occur. Epistaxis is the most common, and, in the advanced disease, petechiæ may be present, especially on the legs. The observations on the urine are few and discordant. The glands are not enlarged, except on occasional slight hypertrophy of the mesenteric and retro-peritoneal glands. In the last stage of the disease cachexia is present; the appetite is lost; there may be diarrhœa and hæmorrhages; fever is exceptional. As to the course of the disease, it lasts from six months to two years, advancing steadily to a fatal end. Sometimes, however, it progresses by fits and starts, and rarely there may be an amelioration or even a quasi-recovery. M. Bruhl says that surgical interference (splenectomy) has brought about a complete cure. The complications are pneumonia, perisplenic abscess, and perforation of an ulcer of the stomach or intestine. Splenomegaly must be distinguished from leukæmia, from tumours of the spleen, from amyloid disease, and from the enlarged spleen accompanying cirrhosis of the liver. In the grave forms of anæmia the spleen is rarely much enlarged.

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(2) Laryngeal Paresis after Influenza.

DR. MARCELLIN CAZAUX records a case (*Rev. Gén. de Clin. et de Thér.*, June 10th, 1891) in which paresis of the glottis-openers followed influenza. The patient was a girl, aged 21, who with the exception of two or three slight and transient attacks of aphonia, had enjoyed good health till December, 1889, when she suffered severely from influenza. In the course of the attack she began to suffer from dyspnœa with inspiratory stridor, and, after her recovery from the influenza, this symptom persisted till July, 1890, when she came under the notice of Dr. Cazaux. The dyspnœa was always well marked, but there were from time to time alarming exacerbations. The voice was clear and expiration was unobstructed. No cause of compression of the trachea, bronchi, or recurrent nerves could be discovered, and the thoracic organs appeared to be sound. On laryngoscopic examination, it was seen that the ligamentous part of the glottis opened incompletely during inspiration. The diagnosis of paresis of the crico-arytænoidei postici muscles was arrived at, and the following treatment ordered: Daily applications of the continuous current to the recurrent nerves, and sulphate of strychnine in 1 milligramme pills—from 4 to 10 of these to be taken daily till intolerance was manifested. In three months the patient was completely cured.

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(3) Traumatic Neuroses.

AT a meeting of the Berlin Society of Psychiatry and Nervous Diseases in January, 1891, Dr. Oppenheim dealt specially with the subject of malingering. Supported by the fact that in 67 out of 68 cases his diagnosis and prognosis have been verified by the subsequent history of the patients, he is not without confidence in the enunciation of the following dicta: The disappearance of tremor when the patient's attention is directed to the condition is valueless as evidence of malingering, contrary to what many writers have asserted. Not only in hysterical and neurasthenic persons, but in paralysis agitans and organic brain lesions, the tremor frequently ceases if the attention be drawn to it. There are many convincing objective signs of traumatic neuroses. Inequality of the pupils (usually dilatation of the pupil on the same side as the disturbance of motility and sensibility) is often associated with morbid blushing on the corresponding side of the face. Concentric reduction of

the visual fields has frequently been found by Dr. Oppenheim. The condition may be feigned. It has been cited as proof of simulation in cases presenting or assuming this defect that on testing at various distances there is no corresponding apparent change in the size of the fields of vision; but this decision rests upon a false supposition; the reduction of the fields in the functional neuroses is governed by altogether different laws from those operative in organic brain disease. Some patients (with whom there was no question of compensation) who had contraction of the visual fields showed no expansion thereof when placed at a greater distance from the perimeter. In hysterical patients there often is no enlargement of the perimetric record when the distance of the patient from the fixation point is increased. In simulated contraction there is no similarity to genuine restriction, but a wholly irregular intersection of the white and colour fields is found. Tachycardia is a grave portent; all the author's cases with marked heart symptoms ran an unfavourable course. In the testing of cutaneous sensibility contradictory statements on the part of the patient are not necessarily to be regarded as symptoms of malingering. Exactly the same stimulus applied to the same part may be felt slightly, intensely, or not at all, according to the amount of attention directed to the part. This prevails especially in excitable or insane persons, in whom the attention quickly tires or wanders; consequently it is essential to know to what extent variations occur under normal conditions, and the reflex and defensive movements must be accurately estimated. A sign of much diagnostic value is exaggerated irritability of the muscles to mechanical stimuli. Still more striking is the augmented excitability of the nerves—light percussion of the ulnar, for example, producing strong contraction in the corresponding muscles. Many mistakes in diagnosis are due to the non-recognition of the psychical derangement.

(4) Causation of Thoracic Deformities in Cases of Enlarged Tonsils.

ACCORDING to Professor Phocas, of Lille (*Gazette des Hôpitaux*, May 26th, 1891) the deformities of the thorax frequently observed in association with tonsillar hypertrophy are of rachitic origin. Rickets, it is held, acts as the predisposing cause by rendering the bones soft and yielding, whilst the difficulty in respiration, which is the usual result of enlarged tonsils, serves as an occasional cause of the distortion of the bones which have been thus softened, and in localising the deformity in the thorax. We have here, the author holds, a kind of attenuated rickets, which is manifested by the action of a casual cause, and as a result of excessive functional activity of the respiratory muscles.

(5) Hemiatrophy of the Tongue.

DR. BIRKETT (*Montreal Medical Journal*, March, 1891) gives an account of a man, aged 23, affected with atrophy of the right half of the tongue due to extracranial disease. An attack of mumps nine years previously left a hard painful swelling behind the right angle of the lower jaw. Impaired lingual articulation and deviation of the protruded tongue to the right were the first effects noticed, and developed within a few weeks. Five years later the patient found that pressure on the swelling caused redness of the right half of the face and right ear, hyperidrosis of the same side, and such dryness of the throat as to prevent speech for several minutes. At the date of Dr. Birkett's examination those pressure symptoms were producible. When the tongue lay on the floor of the mouth its tip pointed to the left, and the right half appeared the more bulky; but as soon as protrusion took place deviation to the right and wasting of the right half were obvious. The atrophied portion was yellow, flabby, and gave the reaction of degeneration. Tactile sensibility and special sensation of the organ were intact. A considerable degree of anæsthesia of the fauces and pharynx existed with paresis of the right levator palati and the azygos uvulæ, and of the adductors and abductors of the right vocal cord; also right myosis. The pulse was 96. Dr. Birkett concluded that the right hypoglossal accessorius and vagus nerves, and the right pharyngeal plexus and superior cervical ganglion, were involved. The partial akinesis in the right half of the soft palate, with absence of paralysis in any muscle known to be supplied by the facial nerve, accords with the view long since taught by Hughlings Jackson, that the facial nerve does not furnish motor fibres to the soft palate. Recently Beevor and Horsley have shown (for certain animals) that the levatores palati derive their motor supply from the eleventh nerve. Dr. Birkett infers from the above case that a similar condition obtains in man.

SURGERY.

(6) Concussion of the Spinal Cord.

THE following summary is given at the conclusion of an able and instructive paper by Dr. B. A. Watson, of the Jersey City Hospital, on the Diagnosis of Traumatic Lesions in the Cerebro-spinal Axis and the Detection of Malingering referred to this Centre (*Medical News*, June 6th): (1) As used by those who first employed it, the term "concussion" was erroneously defined, and in its application unfortunately restricted to the brain. These errors had their origin in a deficient knowledge of the pathological lesions engendered by concussive force. (2) Concussion is a more or less violent shaking or agitation of various organs in the body, producing functional derangements dependent on vasomotor changes and well-defined pathological lesions. (3) Concussion may be either general or special—general when several organs are involved at the same time, or special when the entire concussive force is expended on a single organ. (4) The symptoms arising from concussion will chiefly depend on the extent of the pathological lesions and the functions of the organs. (5) The frequency with which concussion will occur in any particular organ will depend on the point to which the concussive force is applied, the relative weight of the organ, the character of its texture and the protection afforded by its anatomical surroundings. (6) The fifth statement supplies the explanation of the comparatively frequent occurrence of concussion of the brain, lungs, liver, and kidneys as compared with that of the spinal cord. (7) Concussion of the brain and spinal cord is always attended with immediate symptoms. (8) Concussion of the brain or spinal cord without immediate symptoms is a mere hypothesis, a myth, and has no real existence. (9) There is no pathognomonic symptom of concussion in any organ of the body, but a thorough, systematic, methodical examination by a skilled surgeon will secure a correct diagnosis.

(7) Extensive Fracture of the Skull.

DR. JENNINGS records (*Amer. Journ. Med. Sci.*, May, 1891) the case of a man, aged 56, who received an injury to his head in a quarrel. He had right-sided hemiplegia and aphasia, and there was a scalp wound on the left side in the parietal region, extending down to the bone, which was fractured and depressed. An operation was performed, and a portion of bone removed; the middle meningeal artery was found to be bleeding, and considerable difficulty was experienced in arresting the hæmorrhage. A fortnight later another operation was undertaken, and another portion of bone commencing to necrose was removed, but it was then found that the fracture was much more extensive than had been at first supposed, and the patient died five weeks and two days after the injury. On examination the cranium was found fractured over the left motor tract into thirteen pieces, four of the lines of fracture traversing the vault of the skull towards the base; these four fissures were from 6 to 10 inches long. One passed anteriorly to the upper margin of the orbit, and was thence reflected along the base of the anterior fossa to the olfactory groove of the left side, the second fissure reached the middle fossa of the base of the skull on the left side, and extended to the hiatus Fallopii; the third fissure extended backward, reaching the left half of the lambdoidal suture, thence passing down nearly to the lateral sinus; the fourth extended across the vertex to the right side, and terminated at the angle of the groove for the lateral sinus. The immediate cause of death was œdema of the lungs.

(8) A Case of Congenital Hygroma.

DR. BENJAMIN IPAVIC (*Wiener med. Wochenschrift*, No. 24, June 13th, 1891) relates a case of congenital hygroma of the left axilla cured by antiseptic drainage. The patient, a boy aged 2 years, was born with a tumour the size of an apple, situated well on the outer side of the left nipple. During the first year it grew very slowly; towards the end of the year a navel-like depression appeared near its middle, and the tumour diminished somewhat. In the second year it grew rapidly and extended into the axilla. On the side of the thorax it reached as high as the clavicle, and its inferior limit corresponded to the fifth rib and presented all the typical characters of a congenital hygroma. An incision was made on the outer side of the cyst, 4 centimetres long, and a tolerably large quantity of yellow fluid, partly blood-stained, was evacuated. A counter-opening was made, a drainage tube inserted, and carbolised dressing applied. The whole of the hygroma did not collapse with the first incision. Fifteen days later a fresh incision and counter-opening was made and drainage continued. During convalescence the child contracted measles. The first opening was made on March 13th; by the end of June the cyst had shrunk to the size of a walnut, and the openings cicatrised. This, with some adjacent loose skin, was excised. At the end of July the wound was completely healed and the child in good health.

MIDWIFERY AND DISEASES OF WOMEN.

(9) Molar Pregnancy and Albuminuria.

DR. SCHUHL (*Archiv. de Tocol. et de Gynéc.*, June 1891) discusses the question as to whether albuminuria in pregnancy is sometimes the cause of myxomatous degeneration of the chorionic villi. After a search through many statistical records, he believes that it may be laid down as a fact that albuminuria in molar pregnancy is usually precocious, as is very clearly indicated in 7 out of 132 cases of this form of abnormal gestation. In 1 of the 7 cases of albuminuria, the albumen appeared during the first month, in 1 during the third, in 3 during the fourth, in 1 during the fifth, and in 1 where the uterine fundus reached to about the level of the umbilicus. On the other hand, many authorities have shown that in otherwise normal gestation albuminuria most frequently occurs during the last three months; being very rare during the earlier periods. Dumas, Dr. Schuhl observes, quotes cases where albuminuria has appeared at the sixth week, and the third, fourth and fifth month, but maintains that these are quite exceptional. The rule, according to Dumas, is that in primiparæ albuminuria commences between the seventh and eighth months, whilst in multiparæ it does not begin until the ninth. From the above evidence, Dr. Schuhl concludes that there is some obscure relation of cause and effect between albuminuria and hydatid degeneration of the chorion.

(10) Hæmatosalpinx and Tubal Gestation.

DR. J. VEIT (*Centralbl. f. Gynäk.*, May 30th, 1891) discusses the now very important question as to the distinction between ruptured early extra-uterine gestation and hæmatosalpinx from other causes. Under the latter category come cases of hæmorrhage into a tube already distended, and cases where the distension follows the bleeding. Dr. Veit relates a case of hæmorrhage into a tube following torsion of a hydrosalpinx. New growths and even injuries may cause hæmorrhage into the tube, but such cases are very rare. The "tubal mole" is a difficult subject. The presence or absence of chorionic villi amongst the coagula in these cases is not the only distinction between ruptured tubal gestation and hæmatosalpinx. The abdominal end of the tube is always open in cases of early tubal pregnancy, excepting where migration of the ovum from the opposite ovary through the opposite tube and across the uterus has occurred. A distinctly closed ostium, sealed up by the usual inflammatory processes, in a tube full of blood or clot otherwise indicates hæmatosalpinx not due to abnormal pregnancy. This closure of the tube is also present in the hæmatosalpinx of atresia of the lower genital tract.

(11) Torsion of Pedicle of an Undiagnosed Ovarian Cyst in Third Month of Pregnancy.

DR. BAUDRON (*Bull. de la Soc. Anat. de Paris*, April-March, 1891, pt. 10) describes a case where a patient, aged 28, was seized with violent pains in the left iliac fossa in the third month of her third pregnancy. She had previously noted occasional pain in the same part. The whole abdomen was now swollen and tender. For a week the violent pains continued, becoming more severe at regular intervals, so that abortion was suspected. There were no rigors, no nausea, no vomiting. Diagnosis was very uncertain, parametritis, retro-uterine hæmatocele, and hydramnios being suggested by different observers. The uterus was of the size normally observed at the end of the seventh month, though the menstrual history indicated that pregnancy had not advanced beyond the third. On the tenth day the patient vomited, the abdomen felt very tender,

and intermittent pains had been continuing for a week. M. Pozzi operated on the next day; digital exploration had proved that there was no evidence of threatened abortion. A dark liver-like body, fluctuating and adherent to the intestine, uterus, and great omentum, lay above the uterus, which was, as expected, gravid, and at the third month of pregnancy. The body was punctured, and six quarts of dark, fluid, fœtid blood escaped. The body was the left ovary, cystic, and with a large pedicle twisted three times from right to left. This pedicle had been detected by palpation a few days previously, and taken for ectopic pregnancy in a rudimentary uterine cornu. The pedicle was ligatured and the tumour removed, the peritoneum flushed, and the wound closed, excepting at the inferior angle, where a strip of iodoform gauze was passed into Douglas's pouch. Abortion took place next day, and a dead macerated fœtus was expelled, without flooding. Three hours later, as the patient was asking for some drink, she was seized with a fatal attack of syncope.

(12) Puerperal Fever.

Dr. Dorr (*Archives of Gynecology*, May, 1891) does not place much confidence in the curette and irrigation with sublimate. He prefers cleansing the uterine cavity with iodine. Although that elementary substance is not the most powerful germicide, its wide range of curative powers in removing products of inflammation and healing sores makes it preferable for application to the uterus in these cases. Iodine suppositories are not always satisfactory. Dr. Dorr prefers the simple vaginal wash and compound tincture of iodine, 1 drachm to the pint of water, the irrigation being repeated every six or eight hours. When, however, the symptoms of fever persist, notwithstanding irrigation of the uterus and antipyretics, a small incision should be made into the abdomen, just wide enough to pass in two fingers, which should be rapidly passed into the sides of the abdominal cavity. Then a good stream of warm boracic lotion must be introduced through a tube and allowed to run in by means of a siphon apparatus, so that the abdominal cavity is thoroughly washed out.

(13) Induction of Premature Labour in Contracted Pelvis.

Dr. Whitridge Williams (*Archives of Gynecology*, May, 1891) agrees with Dohrn's theory, that the value of induction of labour can only be appreciated by comparing the results of premature and spontaneous labours in the same women and not by comparing so many cases of induced labour with so many cases of labour at term. By this method of comparison it appears that twice as many children are saved by inducing labour as by allowing the pregnancy to go on to term. Hence the operation is indicated in properly selected cases, both in the interests of the mother and the child. The degree of contraction within which the operation is justifiable is very limited, and we can only think of it in moderate degrees of contraction. Dr. Williams maintains that since a conjugata vera above 3⅜ inches offers a reasonable chance to both mother and child at term, and those below 2¾ inches offer no chance to the child, the operation should be restricted to these limits. In the rare forms of obliquely narrowed pelvis, whatever its cause, we must be guided almost entirely by the history of previous labours. The operation is therefore restricted to a very narrow range, five-eighths of an inch, which should only be exceeded when the previous history shows that former labours have ended disastrously. In a flattened pelvis of 2¾ inches premature labour must not be thought of, since the prospects of saving the child are very remote and the danger to the mother is greatly increased. The best time for the induction of labour is between the thirty-fourth to the thirty-sixth weeks. The smaller the child the easier the delivery, but unfortunately it has less chance of living, and this must be taken into consideration. An effort should be made to determine the probable size of the child, which, however, is very difficult. Dr. Williams induces labour by giving a daily warm bath, and administering several times in the course of twenty-four hours a warm vaginal douche containing salt or borax, so as to soften the cervix. Strict antisepsis must be observed. He approved of Krause's method of introducing a flexible bougie between the membranes and the uterine wall, allowing it to remain in position, the vagina being filled with iodoform gauze. Care must be observed not to wound the membranes or the placenta. Should Krause's method fail, the obstetrician must adopt Kiwisch's practice of allowing a current of hot water, at 109° to 110° F., to flow through the vagina several times daily for about ten minutes. As an accessory measure to either of the above methods we may puncture the membranes and dilate the cervix with Barnes's bags. In the discussion which followed the reading of this paper at the Gynæcological Society of Baltimore, Dr. H. A. Kelly wished to know how long the children lived. He believed that very few survived. Statistics of great European authorities were unsatisfactory, as they only noted that the child was born alive. Dr. Kelly induced labour by introducing a flexible whalebone bougie between the membranes and the uterine wall high up and sweeping it around for one or two inches and he had never known it to fail.

DISEASES OF CHILDREN

(14) On the Digestibility of Sterilised Milk.

In a joint paper by Professor Leeds and Dr. E. P. Davis (*Amer. Jl. Med. Sci.*, June, 1891), the former describes the starch-liquefying ferment in milk which renders starch paste entirely fluid and capable of passing through a filter. This ferment is coagulated and destroyed by sterilisation, which also has the effect of rendering the casein less readily coagulable by rennet. The peptic and pancreatic digestion of sterilised milk (that is, sterilised at 100° C.) is less complete than that of raw milk. Professor Leeds believes that milk may be rendered "practically sterile" by heating to 68° C. (155° F.) for six minutes without suffering any important diminution in its digestibility; ordinary commercial milk being always more or less acid on delivery, it is necessary before sterilising in this way to neutralise or render it slightly alkaline with carbonate of soda or lime water. A still more advantageous method is said to be sterilisation and peptonisation at the same time, "the proteid matter of which the micro-organisms are composed being digested away and their vitality destroyed." This is effected by maintaining the peptonising mixture at 155° for four minutes. Dr. Davis deals with the result of observations made on infants

in the Philadelphia Hospital; acute enteritis subsided under the use of sterilised milk, and no case of cholera infantum occurred in the hospital; cases of acute diarrhœa treated as outpatients by sterilised milk speedily recovered. On the other hand, it was found that though exempt from acute intestinal disorders, nutrition did not improve, and the infants died in two or three weeks of malnutrition. Infants removed to a different atmosphere and given fresh raw milk rapidly improved. The infants while in hospital were also subjected to antiseptic intestinal treatment. Koplik (*Arch. of Ped.*, June, 1891) gives a summary of previous observations upon the effect of sterilisation on the digestibility of milk. Hueppe recognised a change in chemical composition occurring gradually at all temperatures between 75° C. (155° F.) and 100 C., but thought that the digestibility was scarcely diminished. Munk, Hueppe, and Chapin have all pointed out that the casein of milk suffers a change in sterilisation, and is less easily coagulated by rennet. Hueppe found that milk was more rapidly and certainly sterilised and protected from subsequent acid fermentation by steam than by the boiling bath (twenty minutes in the former being equivalent to one hour in the latter). Hirst has suggested the addition of pancreatin before sterilisation "in order to digest and help the digestion of caseine made difficult of digestive solution during steaming."

(15) Phosphorus in Rickets.

METTENHEIMER (*Jahr. f. Kinderhlk.*, B. xxxii, H. 3), while recognising the difficulty of estimating the value of any drug in a disease which is so much benefited by hygienic measures, believes that phosphorus has a favourable influence on rickets. It appears to exercise this influence upon the general condition, upon the intestinal not less than upon the osseous disorders. It has no directly beneficial action on laryngismus stridulus, but indirectly, if persevered with for several months, it produces a good effect. He discusses the dose and mode of administration. Kassowitz, who has had an extensive experience, uses a solution of phosphorus in almond oil, 1 centigramme of phosphorus in 100 grammes of oil; the dose of this is one teaspoonful, which contains 0.0004 g. of phosphorus. Mettenheimer recommends as an improvement on this the following: Phosphori 0.01 g. (⅛ gr.); ol. amygd. dulc. 30 g. (℥j); pulv. sacch. alb., pulv. gummi arab. āā 15 g.; aq. dest. 40 g. (℥j ℥ij). The dose is one teaspoonful. A better way of administering the phosphorus is, he thinks, by means of the following prescription: ℞ Phosphori 0.01 g. (⅛ gr.); ol. menth. pip. æther. 1 g. (gr. xv); spir. æth. sulf. 14 g. (℥iiiss). The dose of this is one drop. Two doses of phosphorus or even three are borne by some children in the day, whereas in other children more than one dose causes diarrhœa and vomiting. The maximum for any child can only be found by experiment.

PHARMACOLOGY AND THERAPEUTICS.

(16) Therapeutic Uses of Intravenous Injections.

INTRAVENOUS injections into a blood vessel have been ably discussed by M. Mayet before the Lyons Medical Society (*Lyon Médical*, May 10th, 17th, 24th, 1891). Intravenous injections may be useful for three distinct purposes: (1) To make up a deficiency of the quantity of circulating liquid, the result of a considerable loss either of blood as a whole (hæmorrhage) or of its fluid portions (cholera, etc.). (2) To favour the elimination of certain toxic principles—namely, to wash out the organism—by largely increasing the quantity of liquid passing out by the kidneys. (3) To introduce various drugs into the circulation, in order to obtain a prompt action. M. Mayet considers that injections employed in the first manner act principally by re-establishing the mechanical conditions of the circulation, whether transfusion be employed or an artificial liquid injected. In cholera the blood loses a large portion of its watery constituents, and becomes highly concentrated; the introduction of liquid acts here in two ways, by increasing the fluidity of the blood, and by restoring its bulk. Undoubted successes have been in many cases obtained by adopting this method. As to the liquid to be employed, there has been much difference of opinion. What is least likely to be harmful to the corpuscles or the organism generally? Water does not appear to be highly suitable, owing to its known poisonous effect on proteid material, and an "artificial serum" has not in the author's hands yielded better results than simple saline solution. The use of defibrinated blood is doubtful, it being very uncertain whether the foreign corpuscles, ferments, etc., may not exert a harmful influence. Probably the most satisfactory fluid in every way is water containing from 0.5 to 0.6 per cent. of sodium chloride; this has little action on the corpuscles or on the vessels, is easily prepared, and rapidly miscible with the circulating blood. The mode of injection is important. Theoretically, a given vessel should never contain at any moment a quantity of foreign liquid more than equal to that of the contained blood. Thus, if the median basilic vein be employed, this quantity would be about one ounce per minute. In practice, however, not much harm arises from the injection of as much as ten ounces in six minutes, and this should generally be the maximum quantity for a single injection, save in cases of extreme urgency, in which the relative emptiness of the vessels is the chief danger. The quantity injected in a given time should also be regulated by the extent to which the eliminative function of the kidneys is impaired, a point to be specially remembered in the case of cholera. Danger of phlebitis is inconsiderable if proper precautions be adopted in operating. The next use of intravenous injections—to favour the elimination of certain toxic principles—is one which has been much studied of late, especially in its application to uræmia. Its employment in man has been limited, but Dastre and Loye showed its practicability in 1888, and pointed out the necessity for extreme slowness in injecting and for regulating the quantity used by the rapidity with which elimination, which takes some time before commencing, is carried out. This application of intravenous injections is suggested by M. Mayet as a means to be adopted in poisoning by "blood poisons" such as arsenical compounds, arseniuretted hydrogen, sulphuretted hydrogen, chlorate and nitrate of potash, in acute poisoning by salts of mercury and lead, and with some chance of success in poisoning by alkaloids and digitalis. It might also be successful even in conditions due to presence in the blood of toxines, ptomaines, etc., the results of bacterial growth, and in such conditions as uræmia (see SUPPLEMENT, May 9th, No. 418). The action in cholera is probably also

of this kind, the products of the comma bacillus being dissolved and eliminated at the same time as the bulk of the circulating fluid is restored. The introduction of drugs directly into the circulation is more doubtful ground, and is a proceeding the advisability of which has been with some reason called in question. Without doubt this is the most certain and rapid method of administration, and the one generally preferred in physiological experiment, as one can be quite sure that the action of the drug will be quickly and surely produced. Of course the hypodermic method is generally sufficiently rapid, but some drugs are unsuitable either from the quantity required, or from the fact that they produce serious inflammation (for example, chloral). Occasionally, too, as after swallowing soluble poisons, it may be desirable to produce emesis by apomorphine more rapidly than it would occur after hypodermic injection, and in these circumstances M. Mayet would be inclined to inject the drug, in very weak solution of course, into the veins. The objections which have been urged against the method are that there is a risk of (1) unduly violent action, and (2) of the formation of clots in the vessel which may become carried as emboli into the general circulation. Both these dangers can, however, be obviated by using sufficiently dilute solutions, and by injecting very slowly. The method of injecting will be the subject of a future paper, as well as the advantage of the employment of chloral, etc., by intravenous injection in cases when swallowing is impossible.

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(17) Masturbation Cured by Hypnotism.

Dr. Bernheim, of Nancy, reports (*Rev. Gén. de Clin. et de Thér.*, June 17th, 1891) a case in which he succeeded in curing a boy, aged 8 years, of the habit of masturbation by means of hypnotic suggestion. The habit was of three years' standing, the act being repeated on an average three or four times in the night (sometimes during sleep), and two or three times in the day. Emission of semen had taken place since October, 1890, and the child, though sound in constitution, and in particular free from any neurotic tendency, had become pale and thin. He was intelligent, studious, and obedient, but for some time his memory had been rather defective. Medical treatment by bromide of camphor, bromide of potassium (up to 3 grammes a day), baths, diet, and abstinence from wine, and moral treatment (including corporal punishment) had proved equally futile. On April 9th, 1891, Dr. Bernheim hypnotised the boy, and suggested to him that he should put away from him all idea of self-abuse, and should resist any temptation to touch his genital organs, etc. The boy was hypnotised every day till April 16th, and after that every other day for some time. After the very first sitting the boy ceased to masturbate. He gained weight and recovered the hue and appearance of health, and became, in fact, a different child morally and physically. On May 23rd, he wrote to Dr. Bernheim informing him that the cure was still maintained. Bernheim points out that the case was a particularly favourable one, inasmuch as the child was intelligent, and anxious to be freed from the vicious habit into which he had been led, not by neurosis, but by bad example; and his will, though dormant, could be called into action. He adds that suggestion will not prove equally successful in all cases, as it is not the word of the hypnotiser, but the brain of the person hypnotised, that works the cure. If the suggested idea falls on bad psychical soil, it will not take root. Dr. Bernheim cites a case in which, after several weeks of hypnotic treatment, he failed to cure masturbation in a neurotic child who inherited the habit from his father. He insists that hypnotism, though sometimes ineffectual, is never hurtful; so far from weakening the brain, enfeebling the will, or engendering neurasthenia, its effects, when applied as a therapeutical resource in suitable cases, are just the opposite.

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(18) A Counterblast to Tuberculin.

Under the title of "Away with Koch's Lymph!" Dr. N. Senn (*Philadelphia Medical News*, June 6th, 1891) gives his opinion of the therapeutical value of tuberculin with no uncertain sound. His views are based on his own observations in the Milwaukee Hospital during the months of January, February, March, and April, 1891. The tuberculous nature of the lesions was in all doubtful cases established by microscopical examination and search for the bacillus. As a rule the injections were made every other day; the first dose never exceeded 1 milligramme, and in grave cases the treatment was commenced with half that amount. The dose was never increased if the temperature during reaction rose above 101° F., and if this was reached the dose was in many cases diminished, or the interval between the injections increased. The results of the treatment were as follows: Of 11 cases of surgical tuberculosis in no instance was there more than temporary improvement, while in several there was local extension of the disease and serious impairment of the general health. In 43 cases of pulmonary tuberculosis the effects were more serious. Dr. Senn says there can be little doubt that in several of the fatal cases (8) death was hastened by the treatment, while in a number of the mild cases it contributed largely to the rapid local extension of the lesion. He sums up his conclusion by affirming that while the tuberculin treatment can show no better results, it has been productive of more harm than almost any other plan of treatment heretofore suggested. He adds that he has given Koch's "lymph" a fair trial, and has carefully observed its effects, and he has become firmly convinced both of the danger attending its use and its utter inutility in curing any form of tuberculosis. He protests earnestly against further experimentation with this "mysterious and dangerous fluid."

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(19) Tuberculin and Tubercle Bacilli in the Blood.

Dr. H. Kossel (*Berlin. klin. Woch.*, No. 19, 1891) returns to the question of the appearance of tubercle bacilli in the blood after the exhibition of Koch's tuberculin, and maintains that Liebman's statements and statistics must be very much exaggerated or based on error. Liebman found tubercle bacilli at all times after injection; in 17 out of 43 cases during the febrile stage; and in 39 out of 98 during the apyrexia. Kossel, in a second series of experiments, has examined 10 new patients, and in only a single case was there even a bacillus that might be mistaken for a tubercle bacillus. Giving the results of all other workers who have taken up the question, he finds that in 800 recorded observations, only 3 tubercle bacilli have been found. These figures contrast very markedly with Liebman's, who obtained positive results 56 times in 141 examinations. Kossel thinks that, as the result of his own observations and those of Prior-Bonn, Ewald,

Barling and Wilson, Abraham, Cantani, Hamerle, and Mikulicz even in the face of Liebman's statistics, it must be held that after the injection of tuberculin there is no passage of tubercle bacilli into the circulation. [It has been suggested that Liebman used ward cover glasses that had been repeatedly used for sputa, and that the bacilli he found were bacilli from this material that had not been removed in the process of cleansing].

(20) Influence of Bitter and Aromatic Substances on Gastric Secretion and on Digestion.

THE action of bitter and aromatic substances on gastric digestion has been a subject of much controversy, although their use in therapeutics has been long established. Some believe that bitters stimulate the stomach to greater secretion of mucus, and interfere with the digestion of albuminoids; these consider that any increase in the secretion of gastric juice resulting from their use is a pure supposition. Others, again, consider that bitters excite the function not only of the gastric glands, but also of the muscular walls of the stomach. Professor G. Marcone (*Riforma Medica*, June 8th, 1891) has endeavoured to settle the question on a sound physiological basis. He has studied the action of sixteen drugs belonging to the various groups of bitters, aromatics, and stimulants, and finds that all, without exception, cause increase of the secretion of gastric juice. (1) Mixing the drug with food, prepared always in the same manner: (*a*) the period of digestion is shortened; (*b*) the quantity of gastric juice is increased; (*c*) the movements of the stomach are more active and more efficient; (*d*) the gastric juice, increased in amount, retains its full digestive power. (2) Introducing the drug into the empty stomach: (*a*) the quantity of gastric juice is increased; (*b*) the juice retains undoubted digestive power. The above results were verified by control observations made with distilled water in place of drugs. (3) In order to ascertain, if possible, whether the action above observed was of local or reflex origin, the vagi were divided in the neck previous to the introduction of the bitter substances. Under these circumstances (*a*) the contents of the stomach did not increase, and (*b*) notwithstanding an increase of acidity the digestive power of the juice was much diminished. Marcone therefore concludes that the greater part of the effect of bitters is due to stimulation of the vagus endings in the stomach, whence by a reflex action are produced both the increased secretion and the increased peristalsis.

(21) Treatment of Laryngitis in Vocalists.

DR. R. B. FAULKNER (*New York Med. Journ.*, April 11th, 1891) recommends the following treatment when it is desired to enable a vocalist suffering from subacute laryngitis to use his voice temporarily. A laxative is first given. The larynx is then sprayed with cocaine (1 per cent.), and a mixture of aconite with aromatic spirits of ammonia is exhibited internally. A lozenge is to be used several times a day, of which the following is the composition: ℞ Morphinæ, gr. $\frac{1}{60}$; cocain. hydrochlor., gr. $\frac{1}{15}$; tr. aconit., ♏ ½; althææ rad., gr. ½; to make one lozenge. If the more acute symptoms subside under this treatment strychnine is given in the following manner. The morning of the day when the voice is to be used in public gr. $\frac{1}{30}$ of strychnine is given before breakfast, and the dose is repeated after the midday meal; in the afternoon, and before starting for the scene of action, $\frac{1}{30}$ to $\frac{1}{15}$ gr. is given. These are the directions for an adult man. The effect of the strychnine in restoring the voice is, according to Dr. Faulkner, brilliant and prompt.

(22) Sulphonal in the Night Sweats of Phthisis.

DR. EREDE, of Genoa, calls attention (*Riforma Medica*, May 22nd, 1891), to what he calls "the marked antidiaphoretic action of sulphonal." He says that if given in the early hours of the evening it almost invariably succeeds in suppressing or greatly diminishing the night sweats of phthisis. A dose of half a gramme, given in the form of pastille or suspended in some gummy vehicle, general suffices. The largest amount given was 1 gramme; this failed of its effect only in a very few cases in which the disease was extremely advanced. As no untoward effects were ever noticed, even in very debilitated patients, Erede thinks that with proper precautions the drug might be pushed up to 2 grammes, the usual hypnotic dose. In many cases he observed that in discontinuing the sulphonal after a time the sweating did not begin again at once, but only after some days, when it was immediately checked by repeating the medicine. This shows that the organism does not readily adapt itself to the prolonged use of the drug, as it does, for instance, to certain narcotics. Erede is inclined to think that the effect of sulphonal in checking diaphoresis is to be explained by its action on the nervous system.

PHYSIOLOGY.

(23) The Structure of the Central Nervous System (Spinal Cord).

THE method of Golgi has yielded an immense number of new facts concerning the central nervous system, and, confirmed as many of Golgi's facts have been by Ramòn y Cayal and by Kölliker (SUPPLEMENT, November 26th, 1890, art. 246, and February 21st, 1891, art. 174), a second contribution by Kölliker (*Zeits. f. wiss. Zoologie*, li, p. 1) is particularly interesting, as he sets forth at length his results, which in the main are confirmatory of the observations of the two previous observers, that is, of Golgi, of Pavia, and Ramòn y Cayal, of Barcelona. Kölliker used the rapid hardening method of Golgi, and instead of using adult spinal cords, like Cayal, he used fœtal or embryonic cords, for these possess the great advantage that, in as far as the myelin is not yet developed in the nerve fibres, the naked axis cylinders are readily stained by the silver nitrate, so that the relation between the nerve cells and the nerve fibres is much more easily traced. The nerve fibres appear to be quite smooth, so that Kölliker thinks that their black appearance is not due to the deposition of silver on them, but that the axis cylinder itself is stained. Deposits of silver are very common on nerve cells and glia cells. With regard to the mode of ending of the sensory fibres in the spinal cord, Kölliker accepts the view that the descending branches of these fibres in the cord all end in the grey matter, while the ascending branches for the most part pass to the bulb. The collateral branches of the fibres of the posterior root end not directly in cells, but in connection with (1) the substantia gelatinosa of the same and the opposite side, (2) Clarke's column, (3)

substantia spongiosa of the posterior cornu, and (4) in the anterior cornu of the same side. Golgi and Ramòn y Cayal described branches as being given off from the axis cylinder processes of the large motor nerve cells of the anterior cornua, that is, on the intraspinal part of the fibres of the motor root, but Kölliker so far has not observed these. Those cells whose nervous processes—that is, axis cylinder processes—do not pass into the motor roots, but pass into and form part of the longitudinal fibres of the anterior, and especially of the lateral columns, lie for the most part in the zone between the anterior and posterior cornua, and to this group also belong the cells of Clarke's column and the anterior median group of cells of the anterior cornu. Sometimes the axis cylinder processes from these cells pass directly outwards and bend round to pass upwards in the longitudinal white columns; sometimes they split before doing so into two or three branches. Kölliker, in opposition to Cayal, has not seen such fibres entering the posterior column. Some of the median cells of the anterior cornu send a part of their protoplasmic processes across the anterior commissure to the other side. The longitudinal fibres of the anterior and lateral columns bend round in many cases at a right angle, and pass into and end free in the grey matter. Naturally these results must lead to a modification of the theory of the mode of propagation of voluntary and reflex impulses in the cord. In the case of voluntary impulses—that is, impulses subserving voluntary motion passing along the cord along the pyramidal tracts—it is, in the light of these researches, assumed that the fibres of the direct and crossed pyramidal tracts and their collateral fibres successively enter the grey matter at different levels, and that their final terminations surround the motor nerve cells, and by contact of these ultimate terminations—not by direct continuity—the impulses are transferred from the nerve fibres to the nerve cells, from which emerge directly the axis cylinder processes of the motor nerve fibres. Simple reflex movements are supposed to be produced thus: the sensory collateral fibres pass into the grey matter split up, and come into contact with the motor cells on the same plane, and thus excite the latter. The same motor cell may be excited by impulses reaching it along the pyramidal tracts, and also from collateral sensory fibres in relation with it.

PATHOLOGY.

(24) The Actual Number of Tubercle Bacilli which are Present in Tuberculous Sputum.

Dr. George H. F. Nuttall describes (*Johns Hopkins Hosp. Bull.*, May-June, 1891) a method by which he has been able to make accurate estimates of the actual numbers of tubercle bacilli present in tuberculous sputum. The methods heretofore employed for estimating simply the relative number of bacilli in sputum are condemned as unscientific. Nuttall says his observations for the first time give an idea of the enormous number of tubercle bacilli which a patient may expectorate in the course of twenty-four hours. In three cases undergoing the Koch treatment observations on the numbers of bacilli in the sputum were made every few days. In the first case the patient expectorated 2,000,000,000 bacilli during the twenty-four hours. After the patient was inoculated with tuberculin the number rose to 3 and 4,000,000,000. After the inoculations ceased the number fell to a little below what it was originally. In the second case the number of bacilli varied between 20 and 165,000,000 on the days preceding the inoculations, rose irregularly to 283,000,000 after the first inoculation, and fell to only 265,000 by the time the sixteenth inoculation had been reached. The third case showed a decrease from 70,000,000 before the inoculations to 12 and 19,000,000 after the treatment had commenced. A great rise in the number of tubercle bacilli in sputum was observed in one case (not undergoing Koch treatment) to accompany the appearance of elastic tissue. The number of bacilli in this case rose from between 3 and 400,000,000 to over 4,000,000,000. The accuracy of the method is shown by a number of control and culture experiments. Nuttall believes his method will prove valuable in any experiments where it is desirable to introduce a definite number of organisms into culture media, disinfectants, etc. In point of accuracy it certainly far surpasses the loop method generally employed. With such organisms as the tubercle bacillus this method will enable the experimenter to determine the number he is inoculating into an animal with a degree of certainty that has not been possible hitherto. Inoculations made under such conditions will clearly show the difference in degree of virulence possessed by various organisms, as also the relation between the number of bacteria introduced and the progress of the disease. This method brings us moreover a step nearer to solving the problem of the significance of involution and degeneration forms of bacteria.

(25) Pyogenic Cocci in the Sweat in Pyæmia.

Dr. Anton Freiherr von Eiselsberg, Assistant in Professor Billroth's clinic in Vienna, reports (*Berl. klin. Wochenschrift*, June 8th, 1891) the discovery of pyogenic cocci in the sweat of a man aged 31, the subject of pyæmia, following osteomyelitis of the femur. The patient was somewhat relieved by operative procedures, and these were followed by excessive sweating, but he ultimately died with multiple pyæmic abscesses. Both in the pus from the original seat of disease and in that from the metastatic abscesses and also in the patient's blood, a large quantity of staphylococcus pyogenes aureus was discovered. In order to examine the sweat, the patient's forehead was very carefully cleansed and disinfected, and specimens of sweat were taken from various parts of the skin so cleansed directly they appeared. Inoculations into cultivation tubes were made, and it was found that in agar and gelatine no result took place, but in two agar tubes a growth ensued, which on further inoculation was proved to consist of staphylococcus aureus. Cultivation on plates and frequent repetition of the experiments were followed by similar results. The presence of the identical micro-organism in the pus and in the blood and in the sweat, after the most elaborate precautions had been taken to prevent contamination of the skin, would seem to warrant the conclusion that the coccus is actually present in the sweat and is excreted from the body with it. The improvement so commonly noted after excessive sweating may perhaps be directly dependent upon this excretion, and at any rate should direct attention to the treatment of the skin in such cases, so as to favour as far as possible the excretion of sweat when the disease is presumably due to the presence and activity of the staphylococcus aureus.